

APPENDIX B POTENTIAL AREAS OF CONCERN

In June of 2002, Chevron submitted a correspondence to NJDEP outlining a list of manifolds, tank basins, process plants and loading racks which were not listed on the current HSWA Permit. Chevron called these units “Potential” Areas of Concern (PAOCs) to discern them from “AOCs” on the Permit. These units were listed numerically from 1 through 95, with POACs 1 through 24 comprising various manifolds, PAOCs 25 through 73 including tank basins, PAOCs 74 through 87 including old process plants and POACs 88 through 95 including loading racks.

Along with the document, Chevron submitted a PAOC basemap outlining the approximate physical extent of the unit (similar to the SWMU/AOC basemap). Chevron subsequently overlaid the two maps to determine if any PAOCs were covered by units already on the permit. Several units produced redundancies, or were sufficiently covered by existing units, LNAPL areas, etc. Table B-1 outlines these units, along with a brief description of the overlapping unit or area already being addressed by the permit.

Table B-1. PAOCs Addressed By Overlapping SWMUs and AOCs

PAOC	Designation	Overlapping Area
PAOC 1	PRC Meter Rack	EY4 LNAPL Area
PAOC 2	Number 3 Berth	East Yard Basin Closure
PAOC 3	Number 4 Berth	East Yard Basin Closure
PAOC 4	Number 5 Berth	AOC 29
POAC 7	Lead House	NF6 LNAPL Area & AOC 8
PAOC 22	312, 313, 318 Pump Manifold	NF2 LNAPL Area
PAOC 23	Buckeye Manifold	NF6 LNAPL Area & AOC 15
PAOC 35	Tank Basin 305	NF6 LNAPL Area
PAOC 45	Tank Basin 328	NF3 LNAPL Area
PAOC 46	Tank Basin 330	NF3 LNAPL Area
PAOC 57	Tank Basin 752	EY3 LNAPL Area
PAOC 71	Tank Basin 775, 776	EY4 LNAPL Area
PAOC 73	Tank Basin 75D-1	NF3 LNAPL Area
PAOC 74	Catalytic Cracker	MW-37
PAOC 79	Number 5 Berth	5 Berth Coal Tar
PAOC 90	Bulk Station	AOC 21

As a result of the overlap, these units will be removed from the list of PAOCs.

Chevron subsequently ranked the remaining units to determine which might pose the greatest potential risk to human health and/or the environment. This was achieved through a step by step flow chart and ranking system. The flow chart ranked the units based on several criteria to include whether the unit was in operation, its potential release history, its proximity to property boundaries, etc. As a result of the PAOC classification, the investigation of the following units have been deferred to a later date:

- PAOC 6 – Gasoline Blender;
- PAOC 13 – 757/758 Manifold;
- PAOC 15 – 759 Tank Manifold;
- PAOC 16 – Gasoline Shipping Pumps;
- PAOC 28 – Tank Basin 18;
- PAOC 29 – Tank Basin 19;
- PAOC 31 – Tank Basins 30, 31 and 32;
- PAOC 33 – Tank Basin 303;
- PAOC 34 – Tank Basin 304;
- PAOC 41 – Tank Basin 316;
- PAOC 42 – Tank Basin 317;
- PAOC 43 – Tank Basin 318;
- PAOC 44 – Tank Basins 321, 322, 323, 324 and 325;
- PAOC 47 – Tank Basin 700;
- PAOC 48 – Tank Basin 701;
- PAOC 49 – Tank Basin 702;
- PAOC 50 – Tank Basin 703;
- PAOC 51 – Tank Basins 720, 721 and 722;
- PAOC 52 – Tank Basin 731;
- PAOC 55 – Tank Basin 750;
- PAOC 56 – Tank Basin 751;
- PAOC 58 – Tank Basin 754;
- PAOC 60 – Tank Basins 755 and 756;
- PAOC 61 – Tank Basin 758;
- PAOC 62 – Tank Basin 760;
- PAOC 63 – Tank Basin 765;
- PAOC 65 – Tank Basin 767;
- PAOC 66 – Tank Basin 768;
- PAOC 67 – Tank Basin 769;
- PAOC 68 – Tank Basin 770;
- PAOC 85 – Air Blowing Plant/Emulsion;
- PAOC 87 – NaSH Plant;
- PAOC 91 – Asphalt Loading Rack; and

- PAOC 92 – Caustic/Creslic Acid Loading Rack.

Site Investigations (SIs) were performed on the remaining units. A brief description of each unit follows along with an overview of the investigation conducted within the unit. Chevron has also provided a recommendation as to whether or not the unit should be added to the current HSWA Permit. A formal PAOC Site Investigation Report, to include analytical data, drawings, boring logs, etc., will be submitted subsequent to the submittal of the Full RFI Report, in the fourth quarter of 2003.

B.1 PAOC 5 – No. 6 Oil Blender

PAOC 5 is the location of the former No. 6 Oil Blender. The former No. 6 Oil Blender is located in the Central Yard, south of Tank Basin 19 and east of Tank Basin 16. Three soil borings and one groundwater sample were obtained from the unit as part of the SI. No volatile or semi-volatile organic compounds were detected in either of the soil or groundwater samples obtained from the unit. Based on the information obtained as part of the SI, Chevron will request a “No Further Investigation” (NFI) designation for the unit in the PAOC SI Report.

B.2 PAOC 8 – Main Yard Outside Manifold

PAOC 8 is located in the southern portion of the Main Yard. It is northeast of Tank Basin 2 and northwest of Tank Basin 3. As part of the PAOC 8 SI, three borings were advanced within the unit. Although all three borings exhibited evidence of petroleum impacts based on field screening (photoionization detector (PID) readings and staining), no volatile or semi-volatile analytes were detected in excess of the NJDEP SCC. Based on the results of the SI conducted within PAOC 8, Chevron will request an NFI for PAOC 8 in the PAOC SI Report.

B.3 PAOC 10 – Boar’s Nest

PAOC 10 is located in the central portion of the Main Yard, west of Tank Basin 328 and southeast of Tank Basin 328. Two soil borings and one groundwater sample were obtained from the unit as part of the SI. Although both borings exhibited evidence of petroleum impacts based on field screening (PID readings and visual observations), only minor exceedances of the NJDEP SCC were noted within one of the borings (benzene at 1.6 mg/kg, benzo(a)pyrene at 1.6 mg/kg and benzo(a)anthracene at 1.6 mg/kg). In addition, the site screening groundwater sample also contained benzene marginally in excess of the NJDEP GWQC (2 µg/L). Based on the potential for contaminated soil to act as a source of groundwater contamination within the unit, Chevron will install a well to either confirm or refute an impact to groundwater. If groundwater contamination is confirmed, Chevron will add this unit to the HSWA Permit. If groundwater does not appear to be impacted (via two consecutive sampling events), Chevron will note the minor exceedances of the SCC within the unit; however, no further investigation of the unit will be warranted.

B.4 PAOC 12 – Central Yard Pump House

PAOC 12 is the location of the former Central Yard Pump House. It is located in the Central Yard, east of the former Alkylation Plant and west of Tank Basins 23 and 28. Three soil borings and one groundwater sample were obtained from the unit. Neither of the three soil borings exhibited evidence of petroleum contamination, and similarly no analytes were detected in any of the soil samples in excess of the NJDEP SCC. However, the one groundwater sample obtained from the unit contained benzene in excess of the NJDEP GWQC (20 µg/L). Chevron questions this result based on the lack of field screening results indicating petroleum impacts. Chevron will resample this location to either confirm or refute the presence of benzene in groundwater. If the presence of benzene in excess of the NJDEP GWQC is confirmed, the unit will be added to the HSWA Permit. If the presence of benzene is not confirmed, a third groundwater sample will be obtained to confirm the absence of groundwater contamination.

B.5 PAOC 17 – East Yard Gasoline Filters

PAOC 17 is located in the western portion of the East Yard, adjacent to State Street and southwest of Tank 778. Three soil borings and one groundwater sample were obtained as part of the SI conducted within the unit. Exceedances of benzene were noted within two of the soil samples (11 and 19 mg/kg), with ethylbenzene accompanying one of the benzene exceedances (140 mg/kg). The groundwater sample also contained benzene (4 µg/L) and several semi-volatiles in excess of the NJDEP GWQC. Elevated PID readings were also noted in the soil borings (1,500 mg/kg). Chevron will recommend that this unit be added to its HSWA Permit in the PAOC SI Report.

B.6 PAOC 18 – Barge Loading Manifold

The Barge Loading Manifold is located south of Tank Basin 753 in the central portion of the East Yard. Based on limited access to the unit, only one boring was advanced within the bounds of the unit. The soil sample obtained from the boring contained benzene and several semi-volatile organic compounds in excess of the NJDEP SCC (benzene at 78 mg/kg). Chevron will recommend this unit be added to its HSWA Permit in the PAOC SI Report.

B.7 PAOC 19 – G180/181 Naphtha Pumps

PAOC 19 is located in the central portion of the East Yard. It is located south of Tank Basin 753. Based on the limited access to the unit, only one soil boring was advanced within the unit. The boring exhibited minor evidence of petroleum impact (PID readings and staining); however, no volatile or semi-volatile organic compounds were detected in excess of the NJDEP SCC. Chevron will neither request an NFI for this unit, nor add it to the HSWA Permit until such time that accessibility to the unit has improved and additional information can be gathered for the unit.

B.8 PAOC 20 – Bulk Station Gasoline Pumps

The Bulk Station Pumps were located in the western portion of the East Yard, adjacent to Tank Basin 750. It should be noted that the SWMU 42 (East Yard Crude Slab) LNAPL area is located in the northern portion of the unit. Two soil borings were advanced within the unit as part of the SI. Both soil borings exhibited signs of LNAPL within the core. As such, all future investigations of PAOC 20 will be conducted under the SWMU 42 LNAPL Area investigation, and an NFI will be requested for PAOC 20.

B.9 PAOC 21 – Colonial Pipeline

PAOC 21 is located in the eastern portion of the Main Yard, along the property boundary adjacent to the NJCRR. A total of three borings were installed as part of the SI of the Colonial Pipeline area. Two of the three borings exhibited evidence of impact (elevated PID readings and staining); however, no exceedances of volatile or semi-volatile organic compounds were present. The third boring did not exhibit any evidence of contamination, nor were analytes detected in excess of the applicable NJDEP SCC. Chevron will request an NFI for this area as part of its PAOC SI Report.

B.10 PAOC 24 – East Yard Pump House & PAOC 95 – PRC Loading Rack

Chevron has combined the investigation of these two units due to their location and overlap. No historic samples were ever obtained from the units. A total of four soil borings and one groundwater sample were obtained from the units. Two of the four soil samples contained contaminants in excess of the NJDEP SCC. One sample contained benzene (36 mg/kg) and xylene (350 mg/kg), and the other contained benzene (4 mg/kg). In addition, the one groundwater sample obtained from that unit was not in the area of either of the soil samples noted above, yet still contained PAH exceedances of the NJDEP GWQC. Based on the information obtained from the SI of PAOCs 24 and 95, Chevron will recommend the units be combined and added to the current HSWA Permit. This information will be presented in Chevron's PAOC SI Report.

B.11 PAOC 25 – Tank Basin 11

PAOC 25 is located at the south end of the Central Yard. The area consists of Tank Basin 11, which was used for the storage of asphalt. It is located on the western property boundary of the southern portion of the Central Yard. Three soil borings and three groundwater samples were obtained from the unit from previous and contemporary investigations. None of the three soil samples obtained from the unit contained any exceedances of volatile or semi-volatile compounds. Two of the three groundwater samples similarly did not contain any exceedances of volatile or semi-volatile organic compounds. One groundwater sample located in the extreme northeastern portion of the unit did contain chlorinated volatile organics. Chevron has already performed SI activities to determine the nature and extent of the chlorinated solvent plume located in the southern portion of the Central Yard and has information which points to another likely source. As such, based on a collective review of the data obtained from the unit,

Chevron will request an NFI for PAOC 25 in the PAOC SI Report as it relates to Tank Basin 11 itself. Tank Basin 11 does not appear to have any relevance to the chlorinated plume located beneath a portion of the unit and other samples taken outside of this area did not contain any volatile or semi-volatile exceedances.

B.12 PAOC 26 – Tank Basin 12

Tank Basin 12 is located at the south end of the Central Yard, adjacent to the Pennsylvania Railroad and northwest of Tank Basin 11. Three soil borings and five groundwater samples have been obtained from the unit from historic and contemporary investigations. No volatile or semi-volatile organic compounds have been detected within any of the soil or groundwater samples obtained from the unit. As a result, Chevron will request an NFI for the unit in the PAOC SI Report.

B.13 PAOC 27 – Tank Basin 15

Tank Basin 15 is located in the southwestern portion of the Central Yard, north of Tank Basin 12 and west of Tank Basin 14. Four soil borings and four groundwater samples have been obtained from the Basin as part of historic and contemporary site investigations. No volatile or semi-volatile exceedances have been noted in any of the soil or groundwater samples obtained from the unit. As such, Chevron will recommend an NFI for the unit as part of the PAOC SI Report.

B.14 PAOC 30 – Tank Basin 22

PAOC 30 is located in the Central Yard along the eastern property boundary with the NJCRR. The area consists of Tank Basin 22 and is currently used for crude oil storage. Three soil borings and two groundwater samples have been obtained from the unit. Of the three soil samples, one sample contained marginal exceedances of three PAHs (all below 1.3 mg/kg), while the remaining two samples did not reveal any volatile or semi-volatile exceedances. One of the two groundwater samples was obtained from the location with marginal PAH exceedances, and it too contained marginal exceedances of PAHs in addition to benzene (6 µg/L). The remaining groundwater sample did not reveal any exceedances of volatile or semi-volatile organic compounds. Based on the impact to groundwater within the unit (apparently from marginal soil contamination), Chevron will recommend this unit be added to the HSWA Permit in the PAOC SI Report. However, based on the number of clean samples obtained from the unit and magnitude of soil and groundwater contamination observed within the unit, Chevron will likely characterize the unit with the data available and perform no additional field work within the unit.

B.15 PAOC 32 – Tank Basin 300

Tank Basin 300 is located in the North Field, south of Tank Basins 326 and 301. One boring was advanced in the southeastern portion of the basin. The sample contained elevated concentrations of benzene (61 mg/kg) and xylenes (300 mg/kg). As part of the

PAOC SI Report, Chevron will recommend this unit be added to its current HSWA Permit.

B.16 PAOC 36 – Tank Basin 308

Tank Basin 308 is located on the western property boundary in the North Field. The tank was historically used to store a variety of light end petroleum products. Two historic and three contemporary borings were installed within the unit. While evidence of petroleum impacts were noted in the field screening process (elevated PIDs and staining) within a majority of the borings, no volatile or semi-volatile analytical exceedances were noted within any of the five samples obtained from the unit. As such, Chevron will request an NFI for the unit in the PAOC SI Report.

B.17 PAOC 37 – Tank Basin 309

PAOC 37 is located on the western boundary of the North Field, adjacent to the Pennsylvania Railroad. It is bordered to the north by Tank Basin 308 and to the south by Tank Basin 310. Three soil and two passively placed narrow diameter point groundwater samples have been obtained from the unit. Although evidence of petroleum impacted soil has been noted during the field screening process (elevated PID readings and staining), only one marginal exceedance of a volatile or semi-volatile compound was noted within the three soil samples (benzene at 1.3 µg/L). In addition, of the two groundwater samples obtained within the unit, no volatile or semi-volatile exceedances were noted. It is the position of Chevron that stained soils, high PID readings and a marginal exceedance of benzene in soil (which does not appear to be impacting groundwater) do not warrant that a unit be listed on Chevron's HSWA Permit. Chevron will note the exceedance of benzene and obtain additional information about the subsurface of the tank when the tank is taken out of service and demolished. If additional information is obtained at the time of demolition, Chevron will inform the Agencies and perhaps add the unit to the Permit.

B.18 PAOC 38 – Tank Basin 310

PAOC 38 is located in the northern portion of the Main Yard along the western property boundary, adjacent to the Pennsylvania Railroad. It is bordered to the north by Tank Basin 309 and to the south by Tank Basin 311. A total of four soil and three groundwater samples have been obtained from the unit over time. In general, while soil analytical data does not possess exceedances, several of the groundwater samples do. Benzene exceedances (16 µg/L and 9 µg/L) and minor PAH exceedances have been noted in several samples obtained utilizing site screening tools. In addition, while the soil samples have not shown exceedances, there is reason to believe that weathered soil contamination may be the source of the groundwater contamination within the unit based on the field screening tools used. More specifically, over 1,000 ppm has been registered in the PID within contemporary soil borings placed in the unit. Chevron will recommend this unit be added to its current HSWA Permit in the PAOC SI Report.

B.19 PAOC 39 – Tank Basin 311

PAOC 39 is located in the northern portion of the Main Yard along the western property boundary, adjacent to the Pennsylvania Railroad. It is bordered to the north by Tank Basin 310. Similar to PAOC 38 referenced above, several soil borings and groundwater samples have been obtained from the unit, both historically and as part of the PAOC field effort in December 2002. Also, similar to PAOC 38, the unit is characterized by minimal exceedances noted in soil and groundwater contamination. PID readings as high as 1,800 ppm could be contributing to the benzene and SVOC groundwater contamination noted within the unit. Chevron will recommend this unit be added to its current HSWA Permit in the PAOC SI Report.

B.20 PAOC 40 – Tank Basin 313

PAOC 40 is located in the northern portion of the Main Yard. Tank Basin 313 is located east of Tank Basin 312 and west of Tank Basin 318. A total of three borings and three groundwater samples have been obtained from the basin as part of both historic and contemporary investigations. Various exceedances have been noted in both soil and groundwater samples obtained from the basin. Exceedances of benzene, xylenes and ethylbenzene have been noted in soils, and benzene exceedances as high as 250 µg/L have been noted in groundwater. Based on the information obtained as part of the SI conducted within Tank Basin 313, Chevron will recommend adding this unit to its current HSWA Permit in the PAOC SI Report.

B.21 PAOC 53 – Tank Basin 748

Tank Basin 748 is located in the southeastern portion of the East Yard. The basin is located adjacent to the ASARCO property boundary and the Arthur Kill. Three soil borings and three groundwater samples were obtained from both historic and contemporary investigations conducted within the unit. Marginal exceedances of volatile and semi-volatile organic compounds were noted within several of the soil samples, and 34 µg/L of benzene was noted within one of the groundwater samples. Chevron will recommend this unit be added to its HSWA Permit in the PAOC SI Report.

B.22 PAOC 54 – Tank Basins 749 and 780

Tank Basins 749 and 780 are located on the southern property boundary, adjacent to the ASARCO property boundary. It should be noted that LNAPL Area EY4b is located in the extreme northeastern portion of the unit. A total of four soil borings and four groundwater samples were obtained as part of both historic and contemporary investigations conducted within the unit. Marginal exceedances of semi-volatile organic compounds were identified within two of the four soil samples obtained within the unit. In addition, two of the four groundwater samples obtained within the unit contained volatile and semi-volatile organic compounds in excess of the NJDEP GWQC. One of the two groundwater samples contained benzene in excess of the NJDEP GWQC (150 µg/L); however, this sample was obtained within LNAPL Area EY4b. Investigations

associated with this area will be handled within the investigation of EY4b. The remaining groundwater sample which contained exceedances of the NJDEP GWQC was not located in the LNAPL area. This sample contained PAHs in excess of the NJDEP GWQC (benzo(a)pyrene at 66 µg/L, benzo(a)anthracene at 55 µg/L, etc.). Regardless of the volatile organic contamination noted within the unit as part the LNAPL investigation area, Chevron will recommend this unit be added to its HSWA Permit to address the semi-volatile organic contamination noted elsewhere in the unit.

B.23 PAOC 59 – Tank Basins 755 and 756

Tank Basins 755 and 756 are located in the central portion of the Central Yard. The combined basin is located west of Tank Basin 765 and east of Tank Basin 753. A total of six soil borings and two groundwater samples were obtained from the Basin as part of the SI. Semi-volatile organic compounds were noted in excess of the NJDEP SCC within three of the six soil samples. Primarily, elevated concentrations of PAHs were noted. However, no volatile or semi-volatile organic compounds were noted in excess of the NJDEP GWQC within either of the two groundwater samples. The exceedances of the SCC within the unit will be noted by Chevron and placed in its sitewide GIS database of sample locations and results. However, due to the fact that no impact to groundwater was noted within the unit, Chevron will request an NFI for the unit in the PAOC SI Report.

B.24 PAOC 64 – Tank Basin 766

PAOC 64 is located in the northern portion of the East Yard, along the northern property boundary with Hess, Inc. Tank Basin 766 is located east of Tank Basin 771 and north of Tank Basins 768 and 769. Chevron obtained a total of three soil borings and four groundwater samples from the unit from both historic and contemporary site investigations. One marginal exceedance of benzo(a)pyrene was noted in excess of the NJDEP SCC within one of the samples. No other volatile or semi-volatile organic contaminants were noted in concentrations greater than the applicable standards. Of the four groundwater samples, one groundwater sample contained PAHs and other semi-volatile organic compounds in excess of the NJDEP GWQC (i.e. benzo(a)anthracene at 26 µg/L, benzo(a)pyrene at 39 µg/L). Due to the fact that no field screening data obtained during the site investigations pointed toward gross impacts to the basin, coupled with the lack of gross soil contamination noted within the unit, Chevron proposes to resample the unit for groundwater to confirm the dissolved phase semi-volatile organic contaminants. If these contaminants are confirmed, Chevron will recommend this unit be added to the Permit. If no groundwater contamination is confirmed, Chevron believes enough analytical data has been obtained to request an NFI for the unit.

B.25 PAOC 69 – Tank Basin 773

Tank Basin 773 is located on the northern property boundary of the East Yard, east of Tank Basin 772 and north of Tank Basin 769 and 770. Three soil borings and two groundwater samples were obtained from the unit as part of historic and contemporary investigations. No volatile or semi-volatile organic compounds were detected in excess

of NJDEP SCC or NJDEP GWQC within any of the soil or groundwater samples respectively. Based on the information obtained from the unit Chevron will request an NFI for the unit in the PAOC SI Report.

B.26 PAOC 70 – Tank Basin 774

Tank Basin 774 is located in the northwestern portion of the East Yard. It is located east of Tank Basin 778 on the northern property boundary, adjacent to Hess. A total of five soil borings and three groundwater samples have been obtained from the unit as part of historic and contemporary investigations conducted within the basin. No volatile or semi-volatile compounds were detected in any soil samples or groundwater samples in excess of NJDEP SCC or NJDEP GWQC, respectively. Based on the information obtained from the investigations conducted within Tank Basin 774, Chevron will be requesting an NFI for the unit in the PAOC SI Report.

B.27 PAOC 72 – Tank Basin 778

Tank Basin 72 is located in the northwestern portion of the East Yard, adjacent to the Hess property boundary. A total of five soil borings and two groundwater samples have been obtained from the unit in both historic and contemporary site investigations. No volatile or semi-volatile exceedances were noted in any of the soil or groundwater samples obtained from the unit. As such, Chevron will request an NFI for the unit in the PAOC SI Report.

B.28 PAOC 75 – Alkylation Plant

PAOC 75 is located towards the northern boundary of the Central Yard, just south of Maurer Road. Three historic and three contemporary borings were installed within the unit. In addition, one groundwater sample was obtained as part of the SI. No volatile or semi-volatile organic compounds were identified within any of the six soil samples obtained from the unit. However, marginal exceedances of benzo(a)anthracene and benzo(a)pyrene were identified in the groundwater sample, both of which were reported as an estimated 1 µg/L. Based on the numerous soil samples obtained from the unit, in addition to the very marginal exceedances noted in the site screening groundwater sample, Chevron does not believe further investigation of this unit is warranted. Chevron will request an NFI for the unit in the PAOC SI Report.

B.29 PAOC 76 – No. 1 and No. 2 Crude Units

PAOC 76 is the former location of the No. 1 and No. 2 Crude Units. It is located in the eastern portion of the Main Yard, north of Tank Basin 20. Two historic borings and three contemporary borings were installed within the unit as part of the SI. Four of the five samples did not exhibit volatile or semi-volatile compounds in excess of the NJDEP SCC. One boring (located in the extreme northeastern section of the unit) contained benzene in excess of NJDEP SCC (3.2 mg/kg). However, Chevron would like to note that this sample falls within the limits of LNAPL Area AOC 8 – NF6. It is Chevron's

intention to address the contamination noted within this sample as part of the established LNAPL area. An NFI for PAOC 76 will be recommended as part of the PAOC SI Report.

B.30 PAOC 77 – No. 3 Crude Unit

PAOC 77 is located in the southwestern corner of the Main Yard, adjacent to Maurer Road. Four soil borings and two groundwater samples were obtained from the unit as part of historic and contemporary investigations. No volatile or semi-volatile organic compounds were noted within any of the soil or groundwater samples in excess of the applicable NJDEP SCC or GWQC, respectively. Based on the information obtained from the investigations, Chevron will recommend an NFI for the unit in the PAOC SI Report.

B.31 PAOC 78 – No. 4 Crude Unit

PAOC 78 is the location of the former No. 4 Crude Unit. It is located at the western end of the Main Yard, on the eastern property boundary, adjacent to the Pennsylvania Railroad. Four soil borings and one groundwater sample have been obtained from the unit from both historic and contemporary investigations. Low levels of PAHs and other semi-volatiles have been found in several of the soil samples (i.e., benzo(a)anthracene at 5.2 mg/kg and benzo(a)pyrene at 2 mg/kg). The groundwater sample contained only a slight exceedance of chrysene. Based on the marginal groundwater contamination noted in the site screening sample, Chevron will likely install a well in the unit to either confirm or refute an impact to groundwater within the unit. If groundwater contamination is confirmed, Chevron will likely add the unit to its current HSWA Permit. If groundwater does not appear to be impacted, Chevron will not recommend the unit be added to its HSWA Permit. Chevron does not believe such low levels of PAHs warrant further investigation. Low levels of PAHs have been noted throughout the Refinery as part of the Full RFI. If these concentrations of PAHs do not pose a significant threat to human health (i.e., located in surface soils), or the environment (impacting groundwater and subsequently having the potential to impact a sensitive receptor), or are not located on the property boundary, Chevron does not believe the unit warrants further investigation.

B.32 PAOC 80 – Hexane Plant

PAOC 80 is the former location of the Hexane Plant. It is located in the Main Yard on the western property boundary, adjacent to the Pennsylvania Railroad. Six soil borings, four site screening groundwater samples and one well are located within the unit. Although some of the soil borings exhibited evidence of petroleum impacts (i.e., staining and elevated PID readings), no samples contained volatile or semi-volatile organic compounds in excess of the NJDEP SCC. Of the four site screening groundwater samples, two did not possess volatile or semi-volatile organic compounds in excess of the NJDEP GWQC, while the remaining two contained benzene (5 µg/L) and several other PAHs in excess of the NJDEP GWQC. However, the permanent well recently installed within the unit did not contain volatile or semi-volatile organic compounds in excess of the NJDEP GWQC. This well is located downgradient and approximately 40 feet from

the two site screening samples which contained analytes in excess of the NJDEP GWQC. While site screening tools are useful, Chevron considers data from established wells a more accurate depiction of mobile contaminants in groundwater. As such, based on the information obtained from both historic and contemporary investigations within the unit, Chevron will request an NFI for PAOC 80 in the PAOC SI Report.

B.33 PAOC 81 – Isomax Process Plant

The former Isomax Process Unit is located in the central portion of the Main Yard, north of Tank Basins 3 and 4 and southwest of Tank Basin 314. Based on the size of the unit, a total of six soil borings and two groundwater samples have been obtained from the unit. Although no soil contamination has been identified within the unit, groundwater contamination has been identified (benzene at 160 µg/L) in one of the two site screening samples. In addition, a review of a well located on the northern fringe of the unit (MW-39) also contains benzene in excess of the NJDEP GWQC (29 µg/L). Chevron will recommend this unit be added to its HSWA Permit in the PAOC SI Report.

B.34 PAOC 82 – No. 2 Rheniformer

PAOC 82 is located in the eastern portion of the Central Yard, adjacent to the Pennsylvania Railroad, north of Tank Basin 15. Chevron is in the process of converting the area formerly occupied by the No. 2 Rheniformer into a tank basin. Six soil borings and two groundwater samples have been obtained from the unit in both historic and contemporary site investigations. No volatile or semi-volatile organic compounds were noted in excess of the NJDEP SCC in any of the soil samples. In addition, no elevated PID readings or staining were noted in any of the boring logs. However, one chlorinated solvent was identified in one of the groundwater samples (1,2-dichloroethane at 75 µg/L). This sample is located on the extreme eastern boundary of the unit and access to this location is not impeded by the current tank footprint. No other exceedances of volatile compounds were noted in either of the two groundwater samples. Chevron will resample the location of the original groundwater sample obtained in 1996 to either confirm or refute the presence of chlorinated volatile analytes. If the presence of chlorinated volatiles is confirmed through resampling, Chevron will add this unit to its HSWA Permit. If no chlorinated volatiles are identified through resampling, Chevron will request an NFI for the unit.

B.35 PAOC 83 – No. 3 Rheniformer

PAOC 83 is located in the central portion of the Main Yard, north of Tank Basin 3 and south of Tank Basin 324. Four soil borings and one groundwater sample were obtained from the unit as part of the SI. Although no volatile or semi-volatile compounds were detected in the groundwater sample in excess of the NJDEP GWQC, numerous semi-volatile analytes (PAHs and others), benzene and 1,2-dichloroethane were noted in various soil samples. In addition, LNAPL was noted in one of the boring logs. Chevron will recommend this unit be added to its HSWA Permit in the PAOC SI Report.

B.36 PAOC 84 – PA Plant

PAOC 84 is located in the central portion of the Main Yard, southwest of Tank Basin 300. Three soil borings and one groundwater sample were obtained from the unit as part of the SI. One of the three soil samples contained marginal exceedances of PAHs, the highest concentration of which was 2.1 mg/kg of benzo(a)pyrene. No volatile or semi-volatile compounds were detected in groundwater in excess of the applicable NJDEP GWQC. Chevron does not believe such marginal exceedances of the soil criteria warrant additional investigation if no impact to groundwater is noted. The exceedances of SCC within the unit will be noted by Chevron and placed in its sitewide GIS database of sample locations and results; however, Chevron will request an NFI for the unit in the PAOC SI Report.

B.37 PAOC 86 – Hydrotreater

PAOC 86 is located in the Main Yard, on the western property boundary of the Pennsylvania Railroad. Five soil borings and three groundwater samples have been obtained from the unit from both historic and contemporary site investigations. No volatile or semi-volatile analytes have been detected in excess of the NJDEP SCC. However, one of the three groundwater samples contained a marginal exceedance of benzene (2 µg/L). Based on a review of the boring log for this sampling location, Chevron questions the validity of the sample. No PID readings, staining or other indications of petroleum impacts were evident during the site screening process, nor were any volatile compounds detected within any of the soil samples obtained from the same location. As such, based on the lack of soil contamination within the unit, the lack of site screening data indicating a release to the unit, the lack of groundwater contamination noted in any of the remaining two groundwater samples and the marginal estimated value of 2 µg/L of benzene within the unit, Chevron will recommend an NFI for the unit within the PAOC SI Report.

B.38 PAOC 88 – Propane Loading Rack

PAOC 88 is the location of the former Propane Loading Rack. It is located at the south end of the Central Yard, at the southern property boundary, adjacent to the Garretson Avenue Right of Way. Three soil borings and one groundwater sample were obtained from the unit as part of the SI. The three soil borings did not contain volatile or semi-volatile analytes in excess of the NJDEP SCC. However, the groundwater sample did exhibit a marginal, estimated concentration of 1,1-dichloroethene, equal to the NJDEP GWQC, along with estimated concentrations of 1 µg/L benzo(a)pyrene and 1 µg/L benzo(a)anthracene. Chevron has already performed SI activities related to a chlorinated solvent plume beneath the area. The preliminary results of the investigation indicated a source upgradient of PAOC 88. As such, based on a collective review of the data obtained from the unit, Chevron will request an NFI for PAOC 88 within its PAOC SI Report as it relates to PAOC 88 itself. The Propane Loading Rack does not seem to have any relevance to the chlorinated plume identified in the area.

B.39 PAOC 89 – Asphalt Railcar Rack

The southern portion of the Asphalt Railcar Rack was built in 1999 to 2000. It is located at the southeast end of the Central Yard, at the eastern property boundary with the NJCRR and the southern property boundary of the Garretson Avenue Right of Way. Three borings were advanced within the unit. None of the borings contained concentrations of volatile or semi-volatile organic compounds in excess of the NJDEP SCC. However, Chevron has already performed SI activities related to a chlorinated solvent plume beneath the area. The contamination associated with that plume is deep enough such that an investigation of petroleum impacts to the unit would not have detected the chlorinated solvents contained in the groundwater. The results of the preliminary chlorinated volatile plume indicate a source upgradient from PAOC 89. As such, based on a collective review of the data obtained from the unit, Chevron will request an NFI for PAOC 89 within its PAOC SI Report as it relates to the Asphalt Railcar Rack itself. The Asphalt Railcar Rack does not appear to have any relevance to the chlorinated plume located beneath a portion of the unit.

B.40 PAOC 93 – State Street Parking Lot Loading Rack

The State Street Parking Lot Loading Rack is located on the northeastern corner of the Central Yard, on State Street. The western portion of the PAOC contains SWMU 11b, a suspected TEL burial site. However, based on Chevron's RFI Phase I Soil and Groundwater investigations of the unit, this burial was not confirmed, and an NFA was granted for the unit. As a result, based on the size of PAOC 93, three additional soil borings and one groundwater sample were obtained from the western portion of the unit. No volatile or semi-volatile organic compounds were detected in excess of the NJDEP SCC; however, an estimated concentration of 2 µg/L benzene was detected in the site screening groundwater sample. Based on the marginal exceedance of benzene, Chevron will resample this location to either confirm or refute an impact to groundwater within the unit. If groundwater contamination is confirmed, Chevron will add this unit to the HSWA Permit. If no groundwater contamination is identified, Chevron will request an NFI for the unit.

B.41 PAOC 94 – Butane Loading Rack

PAOC 94 is the location of the former Butane Loading Rack. It is located in the eastern portion of the Main Yard, on the boundary with the Central Railroad of New Jersey. Three soil borings and one groundwater sample were obtained from the unit as part of the SI. While two of the three borings indicated evidence of petroleum impacts (elevated PID readings and staining), only one volatile or semi-volatile analyte was detected in excess of the NJDEP SCC within one of the samples (benzo(a)pyrene at 0.77J mg/kg). In addition, the groundwater sample did not contain volatile or semi-volatile analytes in excess of the NJDEP GWQC. Chevron does not consider one exceedance of 0.77J µg/L of benzo(a)pyrene enough to require further investigation. As such, Chevron will request an NFI for PAOC 94 as part of its PAOC Report.

It should also be noted that three additional PAOCs were scheduled for sampling; however, for various reasons, these areas were not investigated. These include the following:

PAOC 9 – Alky Pit and PAOC 11 – 28 Tank Manifold

No soil borings or groundwater samples were obtained from these units even though Chevron planned on investigating the units due to their proximity to property boundaries. No investigation was conducted within these units at the time of the PAOC field effort due to ongoing construction in the area. Chevron will reassess access issues for these units and complete their SIs by the fourth quarter of 2003.

PAOC 14 – Scholz Manifold

For various reasons at the time of the field effort, this area was not sampled. Again, Chevron will complete the SI of PAOC 14 by the fourth quarter of 2003.